

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2018/2019

MID1043 – MULTIMODAL INTERACTION DESIGN

(All sections / Groups)

18 OCTOBER 2018
9.00 AM – 11.00 AM
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **TEN** pages.
2. Answer all questions in **Section A, B, C, D**

SECTION A [10 MARKS]

Instructions: Answer ALL questions in this section. Write your answers in the Answer Booklet.

1. Which of following is **correct** workflow how digital computer works?
(2 marks)

- A. Input → Processing → Algorithm → Output
- B. Input → Storage → Processing → Output
- C. Input → Processing → Output → Storage
- D. Input → Storage → Output → Storage

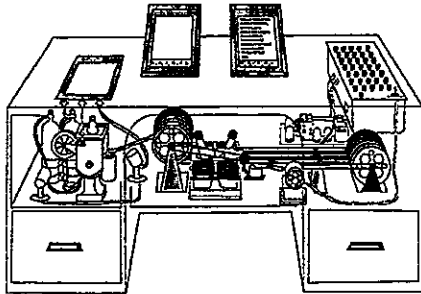


Figure 1

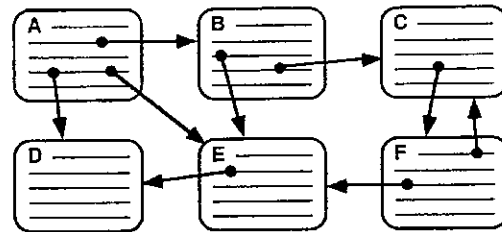


Figure 2



Figure 3

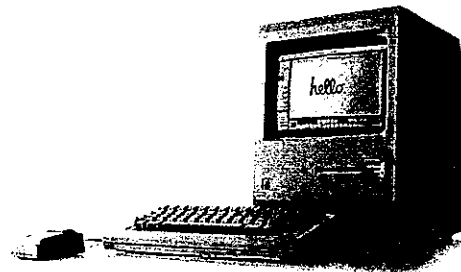


Figure 4

2. Which of the following is **correct** explanation about the Figures above?
(2 marks)

- A. Figure 1 made a great market success.
- B. Figure 2 was developed for Figure 3.
- C. Figure 3 was designed for military use.
- D. Figure 4 had audible modality to convey information.

3. Which of the following is **correct** explanation about the Figures above?
(2 marks)

- A. Figure 3 was designed based on office environment context.
- B. Figure 3 and mouse were introduced together for the first time in the world.
- C. Figure 1 and Figure 3 uses magnetic disc for its storage medium.
- D. The price of Figure 4 is 2 times expensive than Figure 3.

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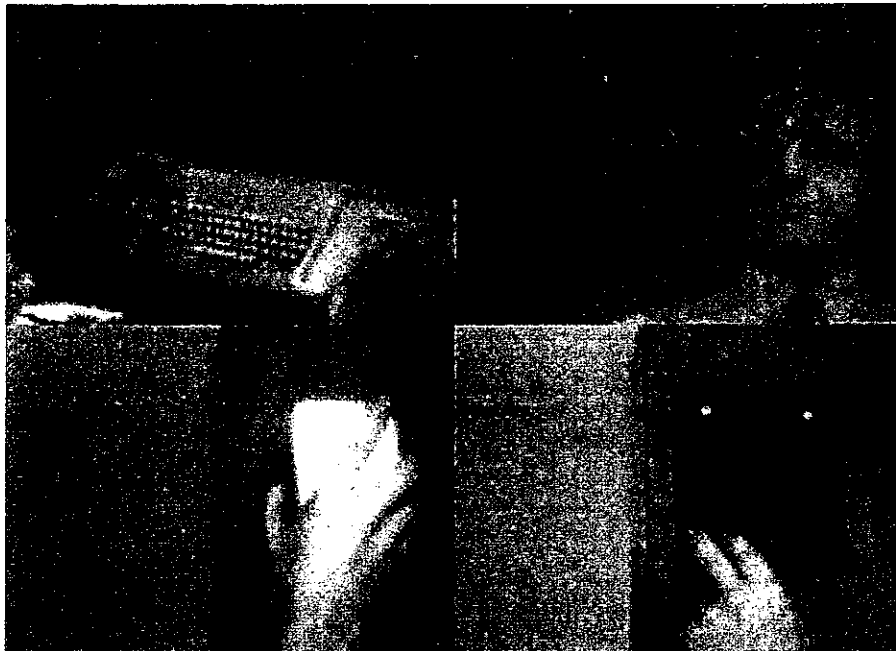


Figure 5 A computer system demonstration in 1960's

4. Which of the following is **correct** about the demonstration image above?
(2 marks)
- A. Eye movement detection technology was demonstrated.
 - B. MOSAIC web-browser was used for the demonstration.
 - C. Icon was introduced for the first time.
 - D. Direct manipulation of data through a mouse was demonstrated.
5. Which of the following is **correct** names for the figures (1~5) above?
(2 marks)
- A. Figure 1—MEMEX, Figure 2—ENIAC, Figure 3—NLS, Figure 4—Macintosh 128k
 - B. Figure 1—ENIAC, Figure 2—NLS, Figure 3—Sketchpad, Figure 4—Macintosh 128k
 - C. Figure 1—MEMX, Figure 2—NLS, Figure 3—Sketchpad, Figure 4—Macintosh 128k
 - D. Figure 1—MEMEX, Figure 2—Hypertext, Figure 3—Xerox Alto, Figure 4—Macintosh 128k

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SECTION B [10 MARKS]

Instructions: Answer **ALL** questions in this section. Write your answers in the Answer Booklet.

(1) _____ retains the most recent experiences or material that is currently being thought about. It is ... of the just present. Information is retained automatically and retrieved without effort; but the amount of information that can be retained this way is severely limited.

1. Which of the following is the **correct** explanation about (1)? (2 marks)
- A. The retention of (1) is not affected by both time and the number of items.
 - B. (1) can be distracted by some other activities and the information in (1) disappears.
 - C. The capacity of (1) is surprisingly large as film or book.
 - D. (1) is very useful to deliver important information in HCI.

(2) _____ is memory for the past. As a rule, it takes time for information to get into it and time and effort to get it out again.

2. Which of the following is the **correct** explanation about (2)? (2 marks)
- A. The memory in (2) is safe from all the distortions and changes that the human explanatory mechanism imposes upon life.
 - B. How well we can recover experience and knowledge from (2) is highly dependent upon how the immaterial was interpreted in the first place.
 - C. The traditional measures of (2) capacity range from five to seven.
 - D. Whatever the size, (2) is so large as not to impose any practical limit.
3. Which of the following is the **correct** names about (1) and (2)? (2 marks)
- A. (1) working memory, (2) long-term memory
 - B. (1) short-term memory, (2) perpetual memory
 - C. (1) logical memory, (2) empirical memory
 - D. (1) volatile memory, (2) stable memory

Continued...

4. What is the concept of the description below?

(2 mark)

This is a technical term, borrowed from mathematics, meaning the relationship between the elements of two sets of things.

- A. Signifiers
- B. The System Image
- C. Mappings
- D. Feedback

5. What is the concept of the description below?

(2 mark)

This is some way of letting you know that the system is working on your request.

- A. Signifiers
- B. The System Image
- C. Mappings
- D. Feedback

Continued...

SECTION C [10 MARKS]

Instructions: Answer **ALL** questions in this section. Write your answers in the Answer Booklet. All questions presuppose the situation where HCI (Human-Computer Interaction) is required through unconventional PC (Personal Computing) environment.

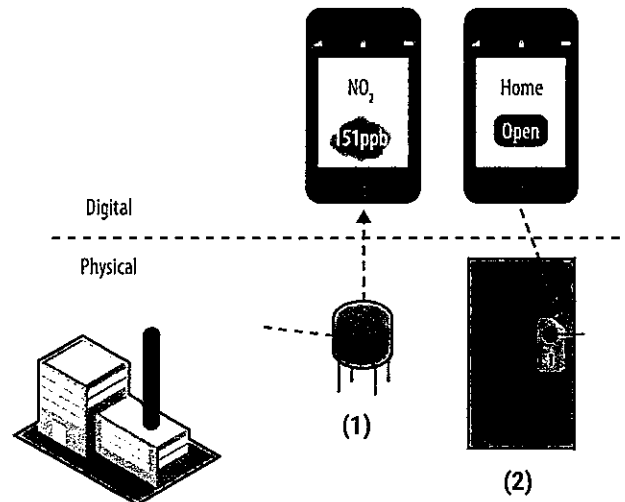


Figure 6 Physical Environment and Digital Information

1. Which of the following is **correct** about (1) and (2) in figure? (1 marks)
 - A. (1) transforms physical energy into electric energy.
 - B. (1) searches electric signals from physical world.
 - C. (2) works either in passive or active way.
 - D. (2) works without power source.

2. Which of the following is **correct** names for (1) and (2) in figure? (1 marks)
 - A. (1) Sensor, (2) Actuator
 - B. (1) Transmitter, (2) Activator
 - C. (1) PSN, (2) Device
 - D. (1) Generator, (2) Interface

3. Which of the following is **incorrect** about physical control design? (1 marks)
 - A. Physical controls are expensive to change once product is shipped.
 - B. Physical controls must be used as input.
 - C. The designers of this control need to consider the tactile aspects.
 - D. The operating force towards physical control influences the emotional aspect of interface.

E. Continued...

4. Which of the following is **correct** about physical control design? (1 marks)
- A. The stroke and the operating force influence the feeling of activation of physical controls.
 - B. Physical control is limited to the visible aspect of its hardware.
 - C. Unconventional physical control is more recommended due to its discoverability.
 - D. It is appropriate for functions controlled remotely.
5. Which of the following is **incorrect** about physical control design? (1 marks)
- A. It is great for direct and fast control.
 - B. It is great when fine adjustments are required.
 - C. It is appropriate to change or update its functions through software update.
 - D. It is recommended for the users with impaired vision.
6. Which of the following is **correct** about screen interface for smart home devices? (1 marks)
- A. It is considerable to combine with physical objects to get dynamic labels.
 - B. It is less appropriate to keep product flexible.
 - C. It reduces the cost for hardware production.
 - D. It is possible to apply conventional PC screen UI and its customs.
7. Which of the following is **correct** about gestural input? (1 marks)
- A. It is considerable for lengthy interaction.
 - B. It requires discoverability to know which gestures are possible and which is not.
 - C. It is recommendable when user has no time to learn possible gestures.
 - D. It has no potential risk of false positive input detection.
8. Which of the following is **incorrect** about tangible input? (1 marks)
- A. It is considerable for tactile learning experience.
 - B. It is considerable when there is no time to learn.
 - C. It is considerable when physical object representing intangible assets.
 - D. It considerable to let user don't feel like interacting with a computer.

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9. Which of the following is **incorrect** about audio output?

(1 marks)

- A. User is free from visual attention towards device.
- B. It is suitable for urgent and time-critical alerts.
- C. It is recommendable to give a product emotional quality.
- D. It always makes user attentive without being annoyed.

10. Which of the following is **incorrect** about Universal Design?

(1 marks)

- A. It aims to make products and environments usable for as many people as possible.
- B. It assumes that everybody is disabled sometimes.
- C. It provides a design solution for certain and specific disabilities.
- D. When it comes to technology, this can mean including multiple modes of output and input

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SECTION D [10 MARKS]

Instructions: Answer **ALL** questions in this section. Write your answers in the Answer Booklet.

A. Conditions

- Environment: A user, Jimin sits on a sofa in a living room
- Device: A smart speaker (e.g. Google Home) is right next to the sofa.
- Possible interaction modality: audio

B. Situation (1)

- The user, Jimin is giving a question to the device
 1. “What movies are out right now?”
- Below is the list of available movies in the nearest favorite cinema from the smart speaker
 1. Hantu Kak Limah (new in this week)
 2. The Meg (new in this week)
 3. Vishwaroopam 2 (No. 1 in box office last week)
 4. Along with The Gods: The Two Worlds (new in this week)
 5. Mission Impossible-Fallout
 6. Our House
 7. The First Purge (No. 2 in box office last week)
 8. The Island
 9. Secrets in The Hot Spring
 10. Jamuan Setan (New in this week)
 11. Siberia
 12. The Cured (No. 3 in box office last week)

1. Write the best exemplary answer from the smart speaker in the given situation (1) to avoid information overload. Available interaction modality is audio only.

(3 marks)

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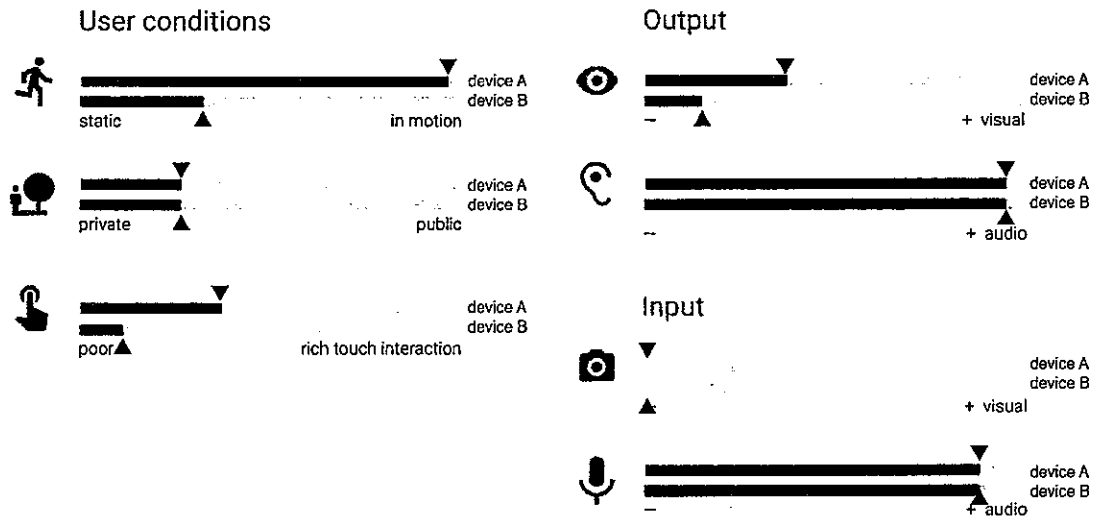


Figure 7 interface matrix analysis

- Write a most suitable modality and interface both for *device A* and *device B*. Your answer should include its strength in accordance with the analysis shown above. You are required to identify which device (from A and B) is car and the other is smart speaker. (4 marks)
- The table below is the modality factor analysis of **standalone living room TV with remote controller**. Complete the table by deciding its degree of factors with the reason why. If necessary provide the supporting technology for each factor. (3 marks)

Factors	Degree of factors
Motion	<i>e.g. static, moderate, or in motion</i>
Environment	<i>e.g. private, moderate, or public</i>
Proximity	<i>e.g. poor, moderate, or</i>
Output—visual	<i>e.g. weak, moderate, or strong</i>
Output—audio	<i>e.g. weak, moderate, or strong</i>
Input—visual	<i>e.g. weak, moderate, or strong</i>
Input—audio	<i>e.g. weak, moderate, or strong</i>

End of Page.

